Amendments to the Claims

Claims 1-2. (Cancelled).

3. (Previously presented) The method of claim 10 wherein the evaporating the aluminum oxide comprises thermal evaporation of the aluminum oxide from the single crystal sapphire.

4. (Cancelled).

5. (Previously presented) The method of claim 10 wherein the evaporating the aluminum oxide comprises ion beam evaporation of the aluminum oxide from the single crystal sapphire.

6. (Previously presented) The method of claim 10 wherein the evaporating the aluminum oxide comprises electron gun evaporation of the aluminum oxide from the single crystal sapphire.

7. (Cancelled).

8. (Previously presented) The method of claim 10 wherein the substrate comprises silicon.

9. (Previously presented) The method of claim 10 wherein the substrate comprises monocrystalline silicon.

10. (Currently Amended) A method of forming an assembly comprising silicon-doped porous aluminum oxide, comprising:

evaporating aluminum oxide from a single crystal sapphire;

evaporating silicon monoxide from a source comprising silicon monoxide;

forming a vapor mixture comprising the evaporated aluminum oxide and evaporated silicon monoxide in a reaction chamber;

depositing at least some of the evaporated aluminum oxide and silicon from the silicon monoxide on a semiconductive material substrate to form a layer of Al_2O_3 doped with silicon atoms on the substrate, some of the oxygen present in the Al_2O_3 being contributed by the silicon monoxide, an amount of silicon present in the silicon-doped aluminum oxide being controlled by controlling the evaporation rate during the evaporating silicon monoxide;

precluding O_2 from flowing into the chamber during the evaporating aluminum oxide, during the evaporating silicon monoxide, during the forming a vapor mixture and during the depositing; ~~and~~

implanting a conductivity-enhancing dopant into the substrate through the layer of Al_2O_3 doped with silicon atoms; and

forming a conductive material on the deposited silicon-doped porous aluminum oxide, the conductive material being separated from the semiconductive material of the substrate by the silicon-doped porous aluminum oxide.

Claims 11-30 (Cancelled).

31. (Previously presented) The method of claim 10 wherein the silicon-doped porous aluminum oxide contains from 0.1 percent to about 30 weight percent of silicon dopant, by weight.

32. (Previously presented) The method of claim 10 wherein the semiconductive material substrate is room temperature during the depositing.

33. (New) A method of forming an assembly comprising silicon-doped aluminum oxide, the method comprising:

evaporating aluminum oxide from a first source;

evaporating silicon monoxide from a second source comprising silicon-monoxide;

forming a vapor mixture within a reaction chamber, the vapor mixture comprising the evaporated aluminum oxide and evaporated silicon monoxide;

depositing at least some of the vapor mixture on a semiconductor substrate to form a layer of silicon-doped Al_2O_3;

precluding O_2 from flowing into the chamber during the evaporation the aluminum oxide and silicon monoxide, during forming the vapor mixture and during the depositing; and

controlling an amount of silicon present within the layer of Al_2O_3 by controlling the evaporation of silicon monoxide.